

Claims

1. Apparatus for estimating the weight of an occupant of a vehicle seat having a seat frame supported by a floor bracket, the apparatus comprising:
a force sensor secured with respect to said floor bracket;
5 a spherical ball in contact with the force sensor;
a ball actuator coupled said seat frame and contacting a surface of said ball opposite said force sensor; and
a spring for preloading said force sensor by biasing said ball against said force sensor.

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2. The apparatus of Claim 1, further comprising:
a sensor bracket secured to said floor bracket and having a domed portion that aligns said ball actuator with respect to said sensor.

3. The apparatus of Claim 2, wherein said spring is disposed between said ball actuator and the dome of said sensor bracket.

4. The apparatus of Claim 2, wherein the domed portion of said sensor bracket has a central aperture through which a neck portion of said ball actuator extends, and interference between said ball actuator and the domed portion of said sensor bracket about said aperture in the event of inverse seat loading limits
5 movement of said seat frame with respect to said floor bracket.

5. The apparatus of Claim 1, wherein said ball actuator includes a conical recess that is aligned with said sensor, and said ball is partially received in said recess to align said ball with said sensor.

6. The apparatus of Claim 1, wherein said sensor includes an aperture, said ball is seated on said sensor about said aperture, and said ball actuator has a substantially planar surface that contacts said ball.

7. The apparatus of Claim 1, wherein the apparatus is inverted such that said ball actuator is secured with respect to said floor bracket, and said force sensor is coupled said seat frame.